

Current Plans for Long Term Archiving of MODIS Data



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EOSDIS Evolution 2015 Vision Tenets



Vision Tenet	Vision 2015 Goals
Archive Management	<ul style="list-style-type: none"> ▪ NASA will ensure safe stewardship of the data through its lifetime. ▪ The EOS archive holdings are regularly peer reviewed for scientific merit.
EOS Data Interoperability	<ul style="list-style-type: none"> ▪ Multiple data and metadata streams can be seamlessly combined. ▪ Research and value added communities use EOS data interoperably with other relevant data and systems. ▪ Processing and data are mobile.
Future Data Access and Processing	<ul style="list-style-type: none"> ▪ Data access latency is no longer an impediment. ▪ Physical location of data storage is irrelevant. ▪ Finding data is based on common search engines. ▪ Services invoked by machine-machine interfaces. ▪ Custom processing provides only the data needed, the way needed. ▪ Open interfaces and best practice standard protocols universally employed.
Data Pedigree	<ul style="list-style-type: none"> ▪ Mechanisms to collect and preserve the pedigree of derived data products are readily available.
Cost Control	<ul style="list-style-type: none"> ▪ Data systems evolve into components that allow a fine-grained control over cost drivers.
User Community Support	<ul style="list-style-type: none"> ▪ Expert knowledge is readily accessible to enable researchers to understand and use the data. ▪ Community feedback directly to those responsible for a given system element.
IT Currency	<ul style="list-style-type: none"> ▪ Access to all EOS data through services at least as rich as any contemporary science information system.



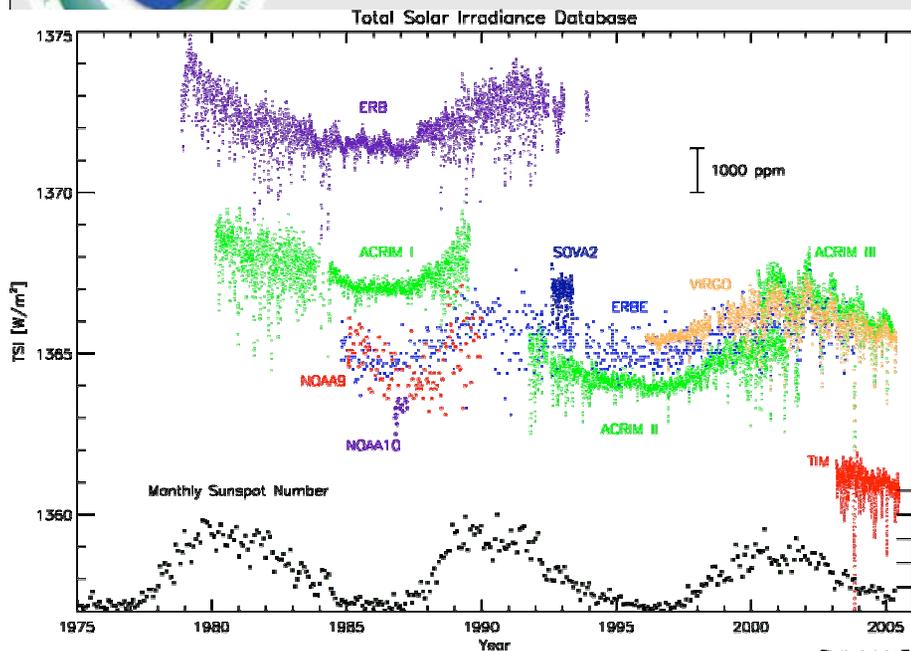


LTA Policy

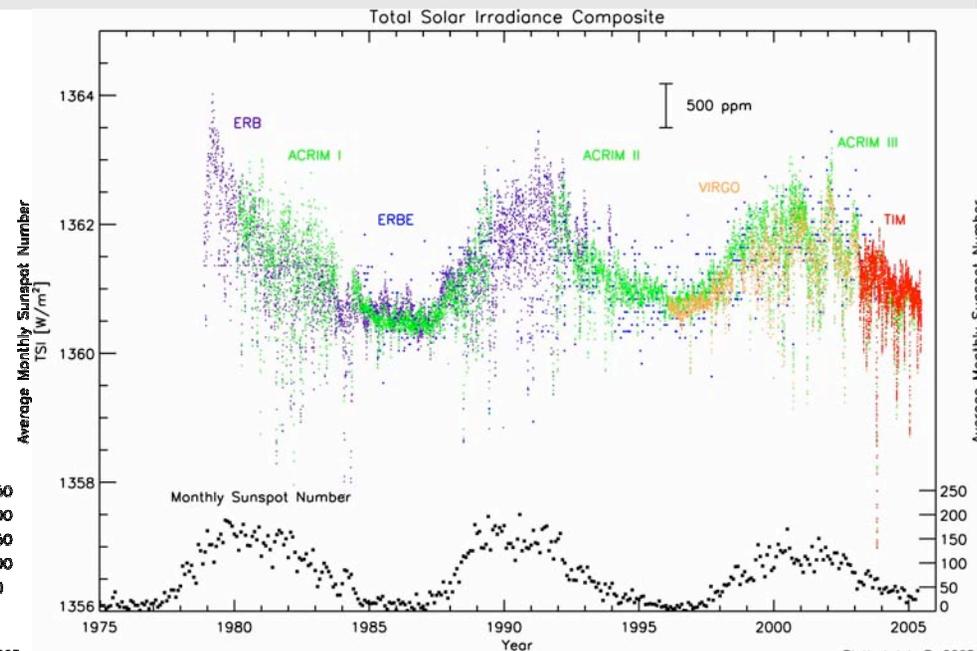
- NASA's agency mandate is research
Earth Science missions' data products are managed by NASA's Distributed Active Archive Centers (DAACs), Mission Data Systems, or Measurement Data Systems for the life of the missions
- NASA EOSDIS Requirement - 2001
For EOS missions' data, provide seamless access for discovery, search, and order until 4 years beyond the end of flight operations
- NASA's partner agencies (NOAA and USGS) mandate is operations
These agencies intended to provide LTA services for Earth Science mission data products within their National Data Centers.
- NASA-NOAA MOU on EOS - 1989
NOAA will use its best efforts to...Assume responsibility at a time to be agreed upon for active long-term archiving and appropriate science support activities for atmospheric and oceans data for the EOS program
- NASA-USGS MOU on EOS - 1993
USGS will fund long-term archive functions. USGS will fund archive and distribution functions, including operations and maintenance costs for EOS and related data more than 3 years old...



NASA Earth Missions Moving to Measurements Focus

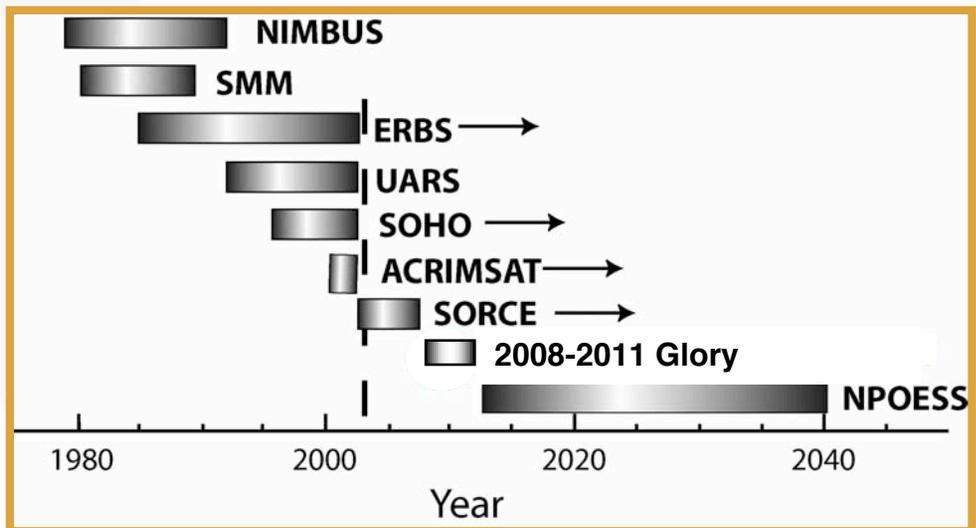


Plotted Jul 7, 2005



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Total Solar Irradiance (TSI) measurements shown are existing 26 year record - precise data records from multiple sensors have been corrected for accuracy through data overlaps.





REASoN in ROSES 2006

- The (late) 2006 REASoN call will be focused on particular Earth science research information system needs, in the two areas of Earth Science Data Records (ESDRs) and Climate Data Records (CDRs).
- An ESDR is defined as a unified and coherent set of observations of a given parameter of the Earth system, which is optimized to meet specific requirements in addressing science questions.
- Attributes to guide the definition of CDRs
 - Key characteristics
 - Critical parameters, multi- sensor and platform data, redundancy
 - Purpose
 - Identify trends (spatial & temporal scales), validate models, improve predictions
 - Influence observing & data systems
 - Defined absolute and relative uncertainty, broad access and distribution enabled
 - “as only NASA can”
 - Space observation data records, ideally from high precision/fidelity space borne detectors and instrumentation with availability of situ networks, ground truth validation. Multi-instrument combined data records.
- These Data Records are critical to understanding Earth System processes, are critical to assessing variability, long-term trends, and change in the Earth System, and provide input and validation means to modeling efforts.



USGS LTA

- USGS is responsible for LTA of Earth science land data
- USGS's National Satellite Land Remote Sensing Data Archive (NSLRSDA) at EDC established by legislation in 1992
- Archive Advisory Committee with representation from academia, government, industry, NGOs, and international partners
- To date holding EOS "Version 0" datasets, Landsat.
- Appropriate prerequisite discussions begun for LTA of EOS ASTER and MODIS Land data.





NOAA LTA

- “Statement of Intent” signed July 3, 2001 by NASA AA (Asrar) and NOAA AA (Withee) for inclusion of NASA’s EOS data LTA within the Comprehensive Large-Array data Stewardship System (CLASS).
- Science-led decisions on readiness for LTA transfer placed with the NOAA - NASA Research and Operations Transition Joint Working Group. The JWG’s Report #1 (February 2006) cited NOAA’s responsibility, and recognized that sufficient resources have not been identified by NOAA to make this happen.
- MODIS LTA Pilot undertaken by ESDIS Project at NASA/GSFC and NOAA/CLASS provided basic “technical handshake” of selected data to facilitate enabling decisions.
 - Pilot results in late August successfully demonstrated the capability to transfer the selected EOS Terra and Aqua MODIS L0 data and related products from NASA to NOAA/CLASS and for NASA to retrieve the data from NOAA/CLASS.
- A NOAA CLASS presentation to the ongoing NRC “Committee on Archiving and Accessing Environmental and Geospatial Data at NOAA” in September 2006 displayed the LTA requirements within CLASS to have eroded to include only EOS MODIS L0.





NASA Planning for MODIS LTA

- NASA continuing to work with USGS for MODIS Land data
- NASA Headquarters to clarify NOAA intentions
- NASA Headquarters will pursue alternate strategies as needed, to ensure the security of these valuable satellite data records in perpetuity.
- NASA Earth Science research needs access to satellite records, including EOS data, for creation of time-series Earth System Data Records and Climate Data Records
- Successes of EOSDIS Evolution, e.g. providing cost control and use of on-demand processing to reduce archive growth, is making it possible to continue to make available data and products needed for Earth system research without risk of unaffordable costs.